

**REMARKS****Rejection Under 35 U.S.C. §101**

Claims 47-63 and 81-88 stand rejected under 35 U.S.C. §101 as being directed to nonstatutory subject matter. While this rejection is traversed, in order to expedite prosecution these claims have been canceled or made dependent upon a method claim. Therefore the §101 rejection is moot.

**Double Patenting Rejection**

The Examiner rejected Claims 47-88 for obvious-type double patenting, citing commonly owned U.S. patent 7,334,268. While this rejection is also traversed, in order to expedite prosecution a terminal disclaimer in favor of that patent is enclosed herein, thereby overcoming this rejection.

**Other Rejections**

Claims 47-51, 53-68, 70-78, and 81-88 stand rejected under §102(b) as anticipated by Hogan. Claims 52 and 69 stand rejected under §103 as unpatentable over Hogan.

**Claim Amendments**

The sole remaining independent claim is method Claim 64, which has been amended. Method Claim 77 is canceled. The amendments inter alia incorporate in Claim 64 subject matter of dependent Claims 65 and 66. It is understood that Claims 65 and 66 were also rejected; however, for the reasons stated below it is respectfully submitted that in fact amended Claim 64 distinguishes over Hogan, both in terms of not being anticipated by Hogan and not being obvious in light of Hogan.

Method in Accordance with the Invention for Making Optical Discs

There are significant differences between the present invention and the cited reference. In particular, the present invention is directed towards providing copy protection for an application file, for example, a software program for a video game. DSV data patterns in accordance with the invention are incorporated within the actual application file. Hence advantageously there is no need later to modify the data, at a later stage such as at encoding, to ensure the protection of the application file on the ultimate optical disc as it is supplied to the consumer. Instead, the application file even before being encoded onto the optical disc carries its own security in terms of the DSV data patterns inside it.

Hence in accordance with the invention the DSV data patterns for copy protection are part of the normal data on the optical disc. Thus, they are part of the information of the application file itself. This ensures that during normal play of the application file on the optical disc carrying the application file, these DSV data patterns are accessed and will prevent copying of the application file.

This is advantageous because thereby the software (application program) itself is copy protected so that the copyright owner of the program does not have to rely upon the activities of a mastering house for copy protection during encoding. The mastering house is the entity that actually encodes the application file onto the master used to press optical discs. Thus the software which is copy protected according to the invention when applied to the optical disc by the mastering house is copy protected automatically, without the mastering house having to take any action.

Thus advantageously in accordance with the invention, even an "original" disc may fail to play in specific circumstances. For example, if the copy protected software has been downloaded by a hacker illegally and is then encoded onto what will be an original disc by a typical disc writer available to consumers, it is likely that the original disc so made will be unplayable. Thus provides copy protection. This is because the type of disc writers available to the public are not able to cope with the copy protection within the software.

Hogan

Hogan in the above respects differs from the present invention. In Hogan, it is the mastering house that must encode the data in a manner to include the copy protection (DSV data patterns) and also the mastering house must use a special encoder to do this. In other words, an application file which in accordance with the invention includes within its content DSV data patterns before the application file is applied to a disc is not contemplated by Hogan.

In detail, see Hogan column 3, beginning line 48:

In a first embodiment, a special encoder encodes an original sequence of symbols into a sequence of channel bits that can be read by all decoders. ....Therefore, the special channel bits can be unambiguously decoded but subsequent reencoding likely results in unreadable channel bits. The special encoder makes one or more non-optimal (over the short term) choices of channel bits, placing the encoder into a state that prevents a long term propagation of states leading to a large accumulated DSV. (emphasis added.)

Hogan continues at column 3, line 61:

In a second embodiment, one or more deliberate errors are introduced into the sequence of symbols after error correction symbols have been added. The resulting sequence of symbols with errors encodes to a sequence of channel bits that can be read by all decoders. However, the error-corrected symbol set likely encodes to a sequence of channel bits that result in a large accumulated DSV. (emphasis added.)

Hogan continues with a description of his third embodiment at column 4, line 1:

The third embodiment exploits an attribute of the data blocking format. A special encoder encodes additional information without adding overhead data. In a specific example, DSV is computed for each individual half-line of blocked data . . . and information is encoded into the sign of the DSV values of blocked half-lines. In an alternative implementation, information is encoded into run length distribution. (emphasis added.)

Thus the point of Hogan is that in all embodiments the DSV data pattern encoding takes place using a special encoder at the mastering house after the actual application file has been delivered in clear text (not copy protected) form from the copyright owner. Hence, the reference in Hogan to the “special encoder” which must be used at the mastering house to convert the application file in its clear text form into a copy protected form for mastering onto the master for later production of actual optical discs. Hogan FIG. 1 shows the special encoder 108, at the mastering house, and which also applied the error detection correction symbols 104 as well as the DSV patterns onto (master) disk 112.

Hogan at column 6, lines 42-49 also refers to the copy protection taking place at the mastering house and how it is applied:

A contrived sequence sufficiently long enough to ensure a large accumulated DSV necessarily substantially increases the overhead for a block of data. Therefore, the use should be limited. For copy protection of software, it is sufficient to have only a few blocks with the extra overhead sequences, but preferably with key software or data in these "protected" blocks. (emphasis added.)

Therefore while it is clear that Hogan copy protects software (application programs), in Hogan this is done differently and at a different stage in the production process than in accordance with the invention since this paragraph of Hogan clearly discusses the encoder at the mastering house, see Hogan FIG. 1.

#### Claims Distinguish Over the References

Method Claim 64 is amended to include subject matter of Claims 65 and 66 and recites the manner in which the application file is created and encoded.

Therefore Claim 64 as amended recites “incorporating into the application file, before its application onto an optical disc, DSV data patterns which have been identified as capable of causing DSV problems when encoded onto an optical disc; wherein the DSV data patterns are located in the

information incorporated in the application file so they are accessed by a player or reader of the optical disc during use of the application file”.

As pointed out above, this is not the case with Hogan where instead the DSV data patterns are only encoded at the same time of the encoding of the application file onto the (master) optical disc. As pointed out above it is an advantage that in accordance with the present method, the copyright owner instead includes the DSV data patterns in the original software file and does not have to rely on the mastering house or its use of the special encoder to do so.

Also the present method enhances security since it puts the copy protection in the hands of the copyright owner rather than the mastering house and there is no need to turn over the clear text form of the application program to the mastering house, which thereby is deprived of the opportunity to illegally make a copy of the clear text version of the application file.

Also advantageously in accordance with the invention there is no requirement for the mastering house to have the “special DSV data pattern encoder” of the type required by Hogan as cited above, which of course is not widely available. On the other hand in accordance with the invention at the stage of the creation of the application program by the copyright owner it is easy to insert the DSV data patterns into an application file as part of original writing of the software.

Therefore not only is security enhanced according with the present approach, also it makes it possible to use any mastering house rather than only one with a Hogan-type special encoder and also puts control of the nature of the DSV data patterns in the hands of the copyright owner, who has the most interest in copy protection rather than relying on the special encoder of Hogan as operated by the mastering house.

Therefore for these reasons Claim 64 distinguishes over Hogan, as do all claims dependent thereon.

Note that several of the claims originally dependent on for instance base Claim 47 are amended to be dependent upon Claim 64.

New Claims

New Claims 89-92 have been added all dependent on Claim 64.

Claim 89 is directed to the additional step of the actual encoding onto the (master) optical disc.

Similarly dependent Claim 90 is directed to the step of recording the application file with the DSV data patterns onto a recordable medium, see specification at paragraph 54. This recordable medium corresponds to a master tape or master disc.

Claims 91 and 92 are directed to articles of manufacturer resulting from the method of Claim 64. Claim 91 is directed to the optical disc itself and Claim 92 is directed to the recordable medium produced by the method of Claim 64.

The new claims are all allowable for at least the same reasons as base Claim 64.

Therefore all pending claims are allowable.

**CONCLUSION**

In view of the above, all pending claims in this application are believed to be in immediate condition for allowance, and the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

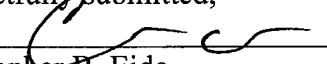
In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Attorney Docket No. 136922004600.

**Paper submitted under Rule 34**

This paper is submitted under Rule 34. The correspondence address continues to be that of Patent Department, Macrovision Corporation.

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Respectfully submitted,

By   
Christopher B. Eide

Registration No.: 48,375  
MORRISON & FOERSTER LLP  
755 Page Mill Road  
Palo Alto, California 94304-1018  
(650) 813-5720